

Date: Tue, 1 Feb 94 04:30:13 PST
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>
Errors-To: Ham-Ant-Errors@UCSD.Edu
Reply-To: Ham-Ant@UCSD.Edu
Precedence: Bulk
Subject: Ham-Ant Digest V94 #20
To: Ham-Ant

Ham-Ant Digest Tue, 1 Feb 94 Volume 94 : Issue 20

Today's Topics:

 Antenna stacking problems
 HELP on radiation resistance equations
 How large a Rotator?
 mininec
 Quagi
 Roof Antenna mounting
 Want to build VHF/UHF antenna

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>

Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>

Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Mon, 31 Jan 1994 19:15:26 GMT
From: dog.ee.lbl.gov!newshub.nosc.mil!news!price@network.ucsd.edu
Subject: Antenna stacking problems
To: ham-ant@ucsd.edu

I put up a 60' tower a few weeks ago which now sprouts
a 40-2CD, WARC dipole, and TH-7, in that order, from top to bottom, all
oriented the same direction.

After 2 weeks of on-the-air time, here are my impressions:

1) The 2-el on 40 works ***very*** well. I can hear and work stuff I only
imagined before.

2) The WARC dipole works *very* well on 30, but seems dead on 17 and 12.
I did a side-by-side with another ham in the area who also has a WARC

dipole, lower than mine, and signals to him on 17 were consistently a few S units louder than to me (same rig).

3) The TH-7 "works" in that signals get louder in the right direction, but overall it sounds rather dead--not much noise, a bunch of weak signals. Kinda like listening to 15 mtrs on a 40 meter dipole. Again, the side-by-side on 15 meters had same results--his 3-el tri-bander at 50 feet was "hearing" better than my TH-7 at 60 feet. (And my location is, if anything, better than his).

Also, I failed miserably in trying to crack a small pileup on 20 SSB last night to work VP8CPC while several other 6s got thru in one call.

So, I seem to have some severe interaction. Any specific experiences with a combination like this? Should I turn the TH-7 and WARC dipole 90 degrees to the 2-el 40? Should I reverse the order of the stack (perish the thought)?

Tnx in advance, 73--Jim, K6ZH
Reply directly to: price@nosc.mil

P.S. What is the address for posting directly to this newsgroup? I've always come in (like now) via a "follow-up" which is clunky at best.

Date: 28 Jan 94 11:39:13
From: idacrd.ccr-p.ida.org!idacrd!n4hy@uunet.uu.net
Subject: HELP on radiation resistance equations
To: ham-ant@ucsd.edu

Roy quotes the handbook and says:

> For an antenna less than 0.1 wavelength long, the approximate
> radiation resistance may be determined from the following:
> $R_r = 273 * (lf)^2 * 10^8$
> where l is the length of the whip in inches, and f is the frequency
> in megahertz.

Can this possibly be right? A 360 inch whip at 3 Megahertz would have a resistance of 3.1 times 10^{16} Ohms. I don't think anybody believes it is that poor a radiator.

Check that formula again carefully.

Bob

--

Robert W. McGwier | n4hy@ccr-p.ida.org Interests: ham radio,
Center for Communications Research | scouts, astronomy, golf (o yea, & math!)
Princeton, N.J. 08520 | ASM Troop 5700, ACM Pack 53 Hightstown
(609)-279-6240(v) (609)-924-3061(f) | I used to be a Buffalo . . . NE III-120

Date: 31 Jan 94 16:57:43 GMT
From: news-mail-gateway@ucsd.edu
Subject: How large a Rotator?
To: ham-ant@ucsd.edu

Can anyone out there offer experience in how large a Rotator is necessary for a given Yagi? I would like to put up a 4 element monoband yagi for 20 meters at 60 feet. AS

Something like a HyGain 204BA or similar. Looking at the glossy literature on Rotators they seem to rate them in terms of square feet. Is it just a matter of finding out the square foot(age) of such an antenna from the supplier or manufacturer and matching that up? Does anyone know offhand the wind load size of a 204BA or similar yagi?

Thanks in advance
JohnJohn Ve

-VE4ZP- (laportej@wl.aecal.ca)

Date: 31 Jan 94 16:30:55 GMT
From: news-mail-gateway@ucsd.edu
Subject: mininec
To: ham-ant@ucsd.edu

I browsed around with Xarchie and came up with a few sites with mininec

freebsd.cdrom.com
/.2/simtel/msdos/ham

ccu1.auckland.ac.nz
/msdos/ham-radio

ftp.stack.urc.tue.nl
/pub/simtel/hamradio

ftp.wustl.edu
/systems/ibmpc/msdos/hamradio

nic.switch.ch
/mirror/msdos/hamradio

two files in these directories...

mininec3.inf
mininec3.zip which contains
mininec3.bas
mininec3.exe
mnpost.bas
mnpost.exe
mnpre.bas
mnpre.exe

If you want NEC2 look on ucsd.edu in
/hamradio/nec

nec2.in.c.tar.Z (unix compress and tar format)

found minor typo in secnds.c. at the beginning on an include statement there
is << should only be <. Also in the Makefile I replaced n.o with nec2.o and
it compiled and ran and matched the test cases on a Sparc 10 (Sun O.S. 4.1.3)

end

the views expressed here are the author's

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"we have met the enemy and he is us." w. kelly

Date: 31 Jan 94 17:23:46 GMT

From: news-mail-gateway@ucsd.edu

Subject: Quagi

To: ham-ant@ucsd.edu

For those of you who don't have the ARRL Antenna Handbook the following
are dimensions for the Quagi antennas listed. In addition there are two
other antennas listed based on designs of W3PM.

All units are cm. the Length of the Reflector and Driven Element are the total wire length. Spcng is the spacing between each element. Bom Ln is the total length along the boom where the elements are located.

Center Freq = 144.500 Number of Elements = 8 Units are cm

	Length	Spcng	Bom Ln
Reflector	220.03	0.00	0.00
Driven El	208.28	53.34	53.34
Director # 1	91.28	40.01	93.35
Director # 2	90.81	83.82	177.17
Director # 3	90.33	44.45	221.62
Director # 4	89.85	66.29	287.91
Director # 5	89.38	66.29	354.20
Director # 6	88.90	66.29	420.50
Total Length =	4.20	meters	

Center Freq = 145.900 Number of Elements = 8 Units are cm

	Length	Spcng	Bom Ln
Reflector	218.12	0.00	0.00
Driven El	205.74	52.70	52.70
Director # 1	90.49	39.53	92.23
Director # 2	90.01	83.18	175.42
Director # 3	89.53	43.97	219.39
Director # 4	89.06	65.72	285.11
Director # 5	88.58	65.72	350.84
Director # 6	88.11	65.72	416.56
Total Length =	4.17	meters	

Center Freq = 147.000 Number of Elements = 8 Units are cm

	Length	Spcng	Bom Ln
Reflector	215.90	0.00	0.00
Driven El	203.20	52.07	52.07
Director # 1	89.69	39.05	91.12
Director # 2	89.22	82.55	173.67
Director # 3	88.74	43.50	217.17
Director # 4	88.26	65.09	282.26
Director # 5	87.79	65.09	347.34
Director # 6	87.31	65.09	412.43
Total Length =	4.12	meters	

Center Freq = 222.000 Number of Elements = 8 Units are cm

	Length	Spcng	Bom Ln
Reflector	143.19	0.00	0.00
Driven El	135.89	34.61	34.61
Director # 1	59.37	26.03	60.64
Director # 2	59.06	54.61	115.25
Director # 3	58.74	28.89	144.15
Director # 4	58.42	43.18	187.33

Director # 5 58.10 43.18 230.51
Director # 6 57.78 43.18 273.68
Total Length = 2.74 meters

Center Freq = 432.000 Number of Elements = 8 Units are cm
Length Spcng Bom Ln
Reflector 71.12 0.00 0.00
Driven El 67.63 17.78 17.78
Director # 1 29.84 13.34 31.11
Director # 2 29.69 27.94 59.05
Director # 3 29.53 14.86 73.91
Director # 4 29.37 22.17 96.09
Director # 5 29.21 22.17 118.26
Director # 6 29.05 22.17 140.44
Total Length = 1.40 meters

Center Freq = 446.000 Number of Elements = 8 Units are cm
Length Spcng Bom Ln
Reflector 68.90 0.00 0.00
Driven El 65.72 17.27 17.27
Director # 1 28.89 12.95 30.23
Director # 2 28.73 27.18 57.40
Director # 3 28.57 14.43 71.83
Director # 4 28.42 21.49 93.32
Director # 5 28.26 21.49 114.81
Director # 6 28.10 21.49 136.30
Total Length = 1.36 meters

Center Freq = 1296.000 Number of Elements = 10 Units are cm
Length Spcng Bom Ln
Reflector 24.29 0.00 0.00
Driven El 23.49 6.03 6.03
Director # 1 9.93 5.08 11.11
Director # 2 9.86 9.32 20.43
Director # 3 9.80 4.98 25.41
Director # 4 9.73 7.42 32.83
Director # 5 9.65 7.42 40.25
Director # 6 9.60 7.42 47.66
Director # 7 9.52 12.06 59.73
Director # 8 9.45 10.01 69.74
Total Length = 0.70 meters

Center Freq = 1296.000 Number of Elements = 15 Units are cm
Length Spcng Bom Ln
Reflector 24.29 0.00 0.00
Driven El 23.49 6.03 6.03
Director # 1 9.93 5.08 11.11
Director # 2 9.86 9.32 20.43

Director #	3	9.80	4.98	25.41
Director #	4	9.73	7.42	32.83
Director #	5	9.65	7.42	40.25
Director #	6	9.60	7.42	47.66
Director #	7	9.52	10.16	57.82
Director #	8	9.45	10.16	67.98
Director #	9	9.40	9.52	77.51
Director #	10	9.32	9.73	87.24
Director #	11	9.25	7.77	95.01
Director #	12	9.19	10.48	105.49
Director #	13	9.12	11.63	117.12
Total Length =		1.17	meters	

end

the views expressed here are the author's

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"we have met the enemy and he is us." w. kelly

Date: 28 Jan 1994 09:16:30 -0800
From: mdisea!uw-coco!nwnexus!tedt@uunet.uu.net
Subject: Roof Antenna mounting
To: ham-ant@ucsd.edu

I am about to relocate my antennas from my terrace to the roof, courtesy of the building manager. They are an IsoLoop and an AR 270. I plan to mount them on Radio Shack masts and tripods, screw the legs to a treated board with concrete block around the tripod feet as anchors. Since neither antenna seems to offer much wind resistance, I don't feel I need to use guy wires.

I would appreciate any comments or suggestions especially as to the location (near the roof's edge, not near the roof's edge, etc.)

Thanks.

73's de Ted, KB7ZQQ

Date: Fri, 28 Jan 1994 22:22:45 GMT

From: agate!news.Brown.EDU!noc.near.net!das-news.harvard.edu!
cantaloupe.srv.cs.cmu.edu!news@network.ucsd.edu
Subject: Want to build VHF/UHF antenna
To: ham-ant@ucsd.edu

I'm looking to build a base station antenna to mount to my house, for 2m and 70cm operation, so I'm interested in recommendations and plans for antennas. There are many antenna books out there, but the local library and retailers don't carry 'em, so I'm not sure which ones might be worth while. Recommendations for books will be appreciated as well.

Also - I'll need to run between 5 and 10 meters of coax between the antenna and radio, much of it outdoors. Any suggestions for suitable and affordable cable?

Many thanks, Mike Blackwell -- ke3ig -- mkb@cs.cmu.edu

Date: 28 Jan 1994 23:42:49 GMT
From: agate!doc.ic.ac.uk!pipex!howland.reston.ans.net!vixen.cso.uiuc.edu!
sdd.hp.com!col.hp.com!srngenprp!news.dtc.hp.com!hpscit.sc.hp.com!
rkarlqu@network.ucsd.edu
To: ham-ant@ucsd.edu

References <2hq10o\$88d@newswire.etdesg.trw.com>, <13386@tekig7.PEN.TEK.COM>,
<N4HY.94Jan28113914@tang.ccr-p.ida.org>om
Subject : Re: HELP on radiation resistance equations

In article <N4HY.94Jan28113914@tang.ccr-p.ida.org>,
Bob McGwier <n4hy@tang.ccr-p.ida.org> wrote:

>
>Roy quotes the handbook and says:
>
>> For an antenna less than 0.1 wavelength long, the approximate
>> radiation resistance may be determined from the following:
>> $R_r = 273 * (lf)^2 * 10^8$
>> where l is the length of the whip in inches, and f is the frequency
>> in megahertz.

>
>
>Can this possibly be right? A 360 inch whip at 3 Megahertz would have
>a resistance of 3.1 times 10^{16} Ohms. I don't think anybody believes it
>is that poor a radiator.

Should be $273 * (lf)^2$ divided by 10^8 .
^^^^^^

|||||||

3 ohms is about right for a whip that is a little less than an 1/8 wave.

By the way, there will be well over 1000 ohms of reactance to tune out in this case. Hence if you have a loading coil with a Q of 1000 (about 12 inch diameter with 1/2 copper tubing), you will lose "only" 25% of your power in the coil, or 1 dB.

Rick Karlquist N6RK
rkarlqu@scd.hp.com

End of Ham-Ant Digest V94 #20

